

CLAIMS

- Claim 1. A gene injection instrument for injection drug to a biological body, comprising:
- a pressure chamber for storing a gas;
 - a conduit having one end connected to said pressure chamber and a second end vented for injection into a biological body;
 - a throat section narrower than said conduit inserted in said conduit having a convergent inlet and a divergent outlet;
 - a drug container for storing drug in liquid form and located above the throat section with a needle tube to release said drug in liquid form as droplets into the throat section; and
 - a gas flow from said pressure chamber through said throat section to carry the droplets to the second end of the conduit.
- Claim 2. The gene injection instrument as described in claim 1, further comprising a control system for controlling the said gas flow.
- Claim 3. The gene injection instrument as described in claim 1, wherein the gas flow is at supersonic speed.
- Claim 4. The gene injection instrument as described in claim 1, wherein the pressure in the pressure chamber is set between 50 to 500 psi.
- Claim 5. The gene injection instrument as described in claim 1, wherein the gas is selected from the group consisting of carbon dioxide, nitrogen and helium.
- Claim 6. The gene injection instrument as described in claim 1, wherein the needle tube lies within 15 mm of the center of the throat section.
- Claim 7. The gene injection instrument as described in claim 1, wherein the convergent inlet and the divergent outlet are symmetrical.
- Claim 8. The gene injection instrument as described in claim 1, wherein convergent inlet and the divergent output are unsymmetrical.
- Claim 9. The gene injection instrument as described in claim 2, wherein the control system controls the release of the droplets.
- Claim 10. The gene injection instrument as described in claim 9, wherein the control system controls by means of changing the pressure of the pressure chamber.
- Claim 11. The gene injection instrument as described in claim 9, wherein the control system controls by means of a stepping motor.